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socrative

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Regularization/GLM (Q6L7)

52% (11/21)

1. Overdispersion in Poisson Regression occurs when

- A var(Y|X)>var(Y)
- B var(Y|X)>mean(Y|X)
- C Variance is decreasing
- D I do not know

2. Which one of these is the measure for goodness of fit for Poisson Regression?

- A Ordinal R^2
- B Chi-square & Pseudo R^2
- C I do not know
- D There are not measure for it

3. Which one of these is the correct interpretation of the coefficient of Poisson Regression?

- A For a 1-unit increase in X, we expect a b1 unit increase in Y.
- B For a 1-unit increase in X, we expect b1 percentage increase in Y.
- C For a 1-percentage increase in X, we expect b1 percentage increase in Y.
- D For a 1-percentage increase in X, we expect b1 unit increase in Y.
- E I do not know

4. In Poisson regression...

- A The asymptotic distribution of the maximum likelihood estimates is multivariate normal.
- B The distribution of the maximum likelihood estimates is multivariate normal.
- C The asymptotic distribution of the maximum likelihood estimates is multivariate Poisson distribution.
- D I do not know

5. Pseudo R-Squared Measures are calculated based on...

- A The likelihood function
- B Chi-squared value
- C I do not know
- D Overdispersion term

6. In the case of intercept-only model

- A) The mean of the dependent variable equals the exponential value of intercept
- B) The mean of the dependent variable equals the intercept
- C) The mean of the dependent variable equals 0
- D) I do not know

7. ln(lambda) = 0.6 - 0.2* female [lamda = the average number of articles] Note: e^(-0.2)=0.78

- A) One unit increase in female brings a 0.2 decrease in ln(lambda).
- B) Being female decreases the average number of articles by 0.78 percent
- C) Being female decreases the average number of articles by 22%
- D) I do not know

8. While running the Poisson Regression we will have never faced with the value of lambda

- A) 0
- B) 1
- C) 2
- D) I do not know

9. Why does not quasi-Poisson model have AIC?

- A) Quasi-Poisson is used quasi-likelihood instead of log-likelihood estimates.
- B) Quasi-Poisson does not use iterative estimation
- C) I do not know

10. Why Poisson regression is called log-linear?

- A) Because we use a log link to estimate the logarithm of the average value of the dependent variable
- B) Because we use a log values of independent variable
- C) Because we use a log value of an independent variable is transformed to linear
- D) I do not know

11. In the multiple linear regression, we assume that...

- A The number of observations is much larger than the number of variables (n>>p)
- B The number of observations is slightly larger than the number of variables (n>p)
- C The number of observations equals than the number of variables (n=p)
- D The number of observations is lees than the number of variables (n<p)
- E It is not important
- F I do not know

12. The way of solving the problem of a large number of variables is...

- A Subset Selection & Shrinkage (Regularization)
- B Shrinkage (Regularization) & Maximum Likelihood estimation
- C Dimension Reduction & OLS estimation
- D I do not know
- E The absence of the right answer

13. The bias of an estimator (e.g. z^) equals...Hint: the OLS coefficients are unbias :)

- A E(z^) - z
- B E(z^2) - [E(z)]^2
- C [E(z^2) - E(z)]^2
- D E(z^2)
- E I do not know

14. Which of following is not a type of regularization:

- A L1 - Lasso
- B L2 - Ridge
- C Elastic Net
- D L3 - Passo
- E I do not know

15. The main idea of regularization is

- A To introduce a small amount of bias in order to have less variance.
- B To introduce a small amount of variance in order to have less bias.
- C To introduce a small amount of variance and bias in order to have less bias.
- D I do not know

16. **With which function we can show regularization in R**

- A glmnet()
- B regular()
- C lm()
- D glm()
- E I do not know

17. **How the tune of any parametr can be made**

- A using Cross validation
- B It is impossible
- C I do not now
- D using larger sample
- E only having population

18. **Elastic Net is**

- A the combination of L1 and L2 regularization
- B the combination of L2 and L3 regularization
- C is independent from other types of refularization
- D I do not know
- E not a type of regularization

19. **Regularization is used only for**

- A Poisson Regression
- B Linear Regression
- C Logistic Regression
- D any regression
- E I do not know

20. **Regularization can solve the problem of**

- A heteroscedasticity
- B multicollinearity
- C autocorrelation
- D I do not know

21. Multicollinearity occurs when

- A) rank(X)<m (m is the number of explanatory variables)
- B) $var(\varepsilon)=\sigma^2 I$
- C) $E(\varepsilon)=0$
- D) $cov(\varepsilon i,\varepsilon j)=const$
- E) I do not know